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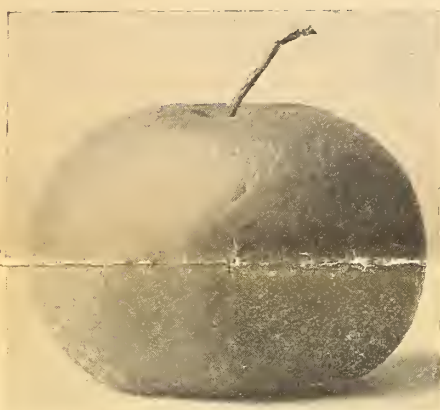
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Northern Novelties for 1922

Some New Fruits, Shrubs, Trees,
Alfalfas and a Table Cereal

Printed January 10, 1922

Department of Horticulture, South Dakota State
College of Agriculture and Mechanic Arts
BROOKINGS



KOLA CRAB



SHOKO CRAB



ZAPTA CRAB

Introduction by Dr. N. E. Hansen

This list offers what is ready from my twenty-seventh year of experiments in originating new fruits at this Station. Much more remains to be done. Many more varieties worthy of trial are coming on. To the many friends who have followed the progress of the experiments with such cordial interest and have helped by sending in orders, I extend my hearty thanks. A work of tremendous magnitude and importance is being done with very limited means. The money received from the sale of plants makes possible the fruit-breeding work on a larger scale than would otherwise be possible.

Many of these new varieties are offered only once or twice as there is not enough land for nursery propagation. The available stock is so limited that only by early orders are you sure of getting what you want. So please order promptly.

More Land Needed

The Regents of Education have kindly granted ten acres more land beginning the coming spring, which will be a great help until the State Legislature can do something more about it. But the need of more land is still acute. A few years ago the South Dakota Legislature furnished for my experiments the largest fruit-breeding greenhouse in the world. This made possible the Hansen Hybrid Plums, such as Opata and Waneta, and a long list of other fruits. But now I need more land to keep up the good work. The state of South Dakota should have the largest fruit breeding farm in the world, because it is necessary to complete the work already planned and to provide for future growth. Such a farm would insure the rapid development of an entirely hardy list of fruits for the prairie Northwest. Will you help realize this, my hope?

Taming the American Wild Crab Apple

The wild crab apple was the only apple known to the Indians before the white man brought over the cultivated apple which is a native of the temperate regions of Europe and Asia. The Indians cached or buried the fruit outdoors in the earth over winter. This served to tone down the astringency.

My chief hope in growing many thousands of apple and crab apple seedlings has been to tame the wild American crab apple enough so that the fruit would be desirable at least for culinary use. In the seedling plantations of this Station the wild crab apple from Elk River, some forty miles northwest of Minneapolis, Minnesota, has proved hardy, productive and practically immune to blight. The abundant fragrant pink and white blossoms in the spring make the trees of great value for lawn and park planting, while the fruit is too sour and astringent to tempt anyone. However, the fruit will keep at least a year and is useful to impart a quince-like flavor to common apple sauce. In fact, some people consider wild American apples a fair substitute for quinces in making preserves.

While the following four varieties are by no means perfect, they are worthy of attention. In the language of the orator we stand at the threshold of a new era. I have my lasso over the broncho's neck but he is not yet fully tamed. Soon I trust he will be eating right out of my hand. I believe these crab apples will prove hardy far north into Manitoba and will keep well into spring in an ordinary cellar. In the standard fruit lists for the northern limits of apple culture in the prairie Northwest we must admit we have only summer and fall varieties, but no real winter apples that will keep into spring in an ordinary cellar. I believe that the future ideal winter apple must probably come about by a totally new combination of unit characters.

In the following three cuts the shriveled skin should be disregarded, as the apples were kept too long in a warm room before photographing.

Kola Crab

Offered for the first time. A hybrid of the wild native crab apple from Elk River, Minnesota, with pollen of Duchess of Oldenburg apple. The fruit is flat, green, full two inches in diameter on the original tree fruiting in greatly crowded nursery rows of seedlings. The skin is oily as in the wild crab. The fruit cooks up into an acceptable sauce. Trees have strong forks and appear immune to blight and winter killing. Kola is the Sioux Indian name for "friend." The heaviest specimen of Kola in 1919 weighed three ounces; the largest was two and one-half inches in diameter. This was the first year of fruiting.

Price of trees, one year buds on two year old seedlings of Yellow Siberian Crab, each \$1.00.

Tipi Crab

Offered for the first time. Also a hybrid of the wild crab of Elk River, Minnesota, with pollen of the Duchess of Oldenburg apple and much the same in tree and fruit as Kola. Tipi is the Teton Indian for "tent."

Price of trees, one year old buds on wild crab seedlings (Malus Soudardii calocarpa seed from the Arnold Arboretum), each \$1.00.

Shoko Crab

Offered for the first time. A hybrid of the wild crab of Elk River, Minnesota, with pollen of Alexander apple, one of the largest Russian apples. Fruit nearly two inches in diameter, green, acid, but cooking into an acceptable sauce. The size of the fruit will probably increase, as the original tree is much crowded in nursery rows. Shoko is the Sioux Indian for "seven."

Price of trees, strong one year buds on seedlings of the Beauty Crab (a Siberian crab seedling), each \$1.00.

Zapta Crab

Offered for the first time. A hybrid of the wild native crab apple from Elk River, Minnesota, with pollen of the Bismarck apple, a large variety from New Zealand resembling the Alexander. Fruit two and one-eighth inches in diameter, green, acid and acerb, but cooks up well into sauce. The original tree is closely crowded in our seedling nursery so the size of the fruit will probably increase under propagation. Zapta is the Sioux Indian for "five."

Price of trees, strong one year buds on two year old Pyrus baccata stock, each \$1.00.

Goldo Apple

Offered for the first time. A seedling of Grimes Golden top grafted on Duchess of Oldenburg apple. The name is condensed from these two varieties. Goldo is distinguished by the smooth, hardy, vigorous growth of the original tree. The fruit is much like Grimes Golden in general appearance and excellent flavor. If the trees proves hardy under propagation it will be a decided acquisition as a variety combining the hardiness of Duchess with the size and high quality of Grimes Golden.

Price, one year buds on Red Siberian Crab seedling stock, each \$1.00.

Linda Sweet Crab

Offered for the first time. A seedling of Malinda apple top-grafted on Sweet Russet Crab apple. A large crab apple with skin much russeted. Flesh mild subacid sweet. Apparently a late winter crab. The influence of the Sweet Russet pollen is evident from the sweet flesh and russet skin. Linda is derived from the word Malinda.

Price of trees, one year buds on seedlings of Olga crab, each 50 cents.

Maga Crab

Offered for the first time. A seedling of MacIntosh Red apple top-grafted on Virginia crab. Fruit large for a crab, flattened, with bright red stripes. The MacIntosh evidently contributed its high flavor as the flesh is of the same type. Season evidently late. This tree looks like a good cross of the MacIntosh apple and the Virginia crab, and if it proves hardy under propagation will be something decidedly worth while. The original tree bore a heavy crop in 1919.

Trees, one year buds on mixed Pyrus baccata stock, each 75 cents.

Oxbo Apple

Offered for the first time. A seedling of Roxbury Russet apple top-grafted on Duchess of Oldenburg apple. The name is condensed from these two varieties. Fruit of fair size, up to two and five-eighths inches in diameter; white, juicy, subacid. Season probably late fall, but not fully determined. A stocky grower in nursery.

Price of trees, one year buds on Red Siberian Crab seedlings, each 50 cents.

Siberian Crab Trees

Seedlings of the true Siberian Crab (Pyrus baccata). Good for park or lawn planting owing to its wealth of blossoms and for the very small fruit from which to raise seedlings for budding in nursery. Trees about 6 feet in height, each 50 cents; per dozen, \$5.00.

Beauty Crab

Offered for the first time spring 1919. One of our seedlings of *Pyrus baccata cerasifera* raised from seed received from the Botanical Gardens at Petrograd, Russia. The name Beauty has been given to this seedling because it is perhaps the brightest in color of all our crab seedlings. It is a brilliant solid cherry red all over with orange red underneath, especially on the shaded side. Size is about one and one-fourth inch in diameter. Dots distinct, few, white. Basin deep, irregular. Calyx deciduous with russet scar, and no opening into the core. Flesh white, firm, very juicy, acid. This is of the Cherry crab type. Tree is a very heavy bearer. It is of special promise owing to its tendency to late keeping. The fruit makes a bright red sauce like the Hyslop crab but the flesh has not the astringency of the Hyslop. We have kept the fruit into January in a rather warm cellar. Tree is very stocky, a vigorous grower with wide and strong forks and strongly resistant to blight. This tree should be of special value at the far North as it may mean the beginning of the development of the Siberian crab as a late keeper.

Available stock 76 trees. One year buds on seedlings of Beauty crab. Trees, each \$1.00.

Anoka Apple

First introduced spring 1918 before fruiting as South Dakota No. 2 and later given the name Anoka, a Sioux Indian word meaning "on both sides." It is a seedling of Mercer (Fluke) wild crab top-grafted on Duchess. This tree has borne heavily in 1918 and 1919. The fruit is two and one-half inches in diameter, round, Duchess type of coloring. Flesh white, good subacid. Season September. I am pleased with the early and heavy bearing of this variety under propagation.

Price of trees, one year buds on Yellow Siberian crab stock, each 50 cents.

Zeleba Apple

Our own importation from Russia. The full name, Krimskaja Zeleba, indicates that the Crimea in southern Russia is the place of origin. As fruited here it is a very large round red apple, size about 3½ inches in diameter, and very heavy, flesh white, pleasant subacid. The fruit cooks up well. An apple of very attractive color, really a beautiful fruit. Season about December to mid-winter.

Trees, one year buds on Red Siberian Crab seedlings. Price each, 75 cents.

Lemon Apple

Limonoe (R. & K. 159) Apple. A large apple, fully 3 inches in diameter; color, clear greenish yellow with bronze bluish. Flesh white, mild subacid, of good quality. Show some evidence of keeping capacity. Although not the first time the Lemon apple has been imported, this is our own importation from Russia. Worthy of a trial at the North.

Price of tree, 1 year old buds on mixed *Pyrus baccata* seedlings, each 75 cents.

Apples on Crab Apple Roots

Root-killing of the common apple stocks is now one great source of failure in apple culture in the prairie Northwest. It is time that definite experiments were conducted over a wide area with standard varieties of apples grown on Siberian crab roots. Such trees will be free from root-killing, will attain less size and bear earlier. My impression of preliminary tests here at this station is that such trees may be planted close together and will no doubt be easier to spray.

Siberian Crabs for Apple Stock

The Siberian Crab Roots for the Apple to Prevent Root-killing and as a Semi-Dwarf Stock

In Bulletin 65 of this Station I urged the trial of Siberian roots to prevent root-killing which is often disastrous at the North. The experiments are still in progress. The seedlings now offered will be suitable for planting out in spring and budding in August. The seedlings offered are from Yellow Siberian, Red Siberian and mixed *Pyrus baccata*. Price of seedlings, 100 for \$4.00.

Russian Sand Pear

In noting the behavior of the many pears imported from Northern Europe and Asia and other countries, special attention is attracted to *Pyrus Sinensis* as received from Russia under the name of *Pyrus Sinensis* R & K 453. These trees have proven hardy and have borne abundant fruit. We raised good seedlings from them. The trees have been very resistant to fire blight. The fruit is small but good for cooking. These seedlings are worthy of planting for those who wish to breed hardy pears and the fruit is valuable for the seed from which to raise hardy seedlings for budding or grafting.

Price of one year seedlings, 3 for \$1.00.

Pyrus Ovoidea Pear

As described in Bulletin 159 of this Station this is the new name of *Pyrus Simoni*, a Chinese wild pear, received from the Arnold Arboretum, Boston. Further investigations in the Arboretum has divided the species so that this tree is now called *Pyrus ovoidea*. The bright red of the leaves in autumn is attractive. The fruit is one and five-eighths inches in diameter, sweet, juicy and of fair quality. We can spare a few one year seedlings; price, 3 for \$1.00.

Pyrus Ussuriensis

In last spring's list I note having imported 15 pounds of seed of *Pyrus Ussuriensis* from Korea. This seed made a good germination and the seedlings a strong growth. Further investigations this summer show that the seed really came from Liaoyong, Manchuria. I am unable to predict as to the hardness of these seedlings. If interested in large numbers write for prices, stating number you wish to test. The blight resistance of this stock is the main claim made for it.

Price, one year seedlings, 12 for \$1.00; \$5.00 per 100.

Tartarian Maple

Acer tataricum. A desirable round topped dwarf maple for the lawn. Hardy and desirable.

Small one year seedlings, 5 for 50 cents.

The Hansen Hybrid Plums

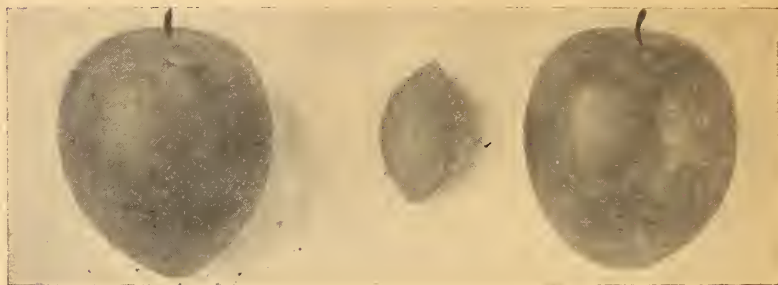
Originated in this Department, they are now represented by far more than a million trees in western orchards and nurseries. They are rapidly finding favor in many other states. My sand cherry hybrids, such as Opata, Sapa, Sansoto, Cheresoto, and Wachampa should be kept in bush form with many stems close to the ground. As they bear heavily on one year old wood, try to have an abundance of this wood coming on by pruning back the shoots that have borne several years. The sand cherry hybrids should not be trimmed up with a high stem as some practice with ordinary plums.

WANETA. This is the largest of all the Hansen Hybrid Plums. It is a 2-inch, 2-ounce plum, and of very strong growth in nursery. An early heavy and persistent annual bearer of delicious plums of immense size. It is a cross of the America, a large Japanese plum, with pollen of the Terry, the largest native plum. The Waneta combines in large measure the most desirable points of the native and the Japanese plums. In a visit to the 1920 Iowa State Fair at Des Moines, I noticed that Waneta and the sister variety Kahinta, were by far the largest plums on exhibition.

For spring we have some trees of Waneta, one year buds on native plum roots, each \$1.00.

Of my other new plums, a few trees, one year old on native plum roots, can be spared of Opata, Sapa, Hanska, Tokata and Wachampa at same price as Waneta.

Ojibwa Plum



Offered for the first time spring 1917. Pedigree: Shiro X Manitoba wild plum (*Prunus nigra*) pollen. Since the Shiro, one of Luther Burbank's plums, is a complex hybrid of four species, the Ojibwa will be a mixture of five different species of *Prunus*: *Nigra*, *Angustifolia*, *Cerasifera*, *Triflora*, *Simoni*. Flesh yellow, of good flavor; skin thin and free from acidity. In my opinion this tree is especially worthy of a trial at the North. The Ojibwa is not nearly as large as the Waneta but should go considerably farther north. The original tree has been very productive. At first sight the pointed shape would make it look like a select pure native Manitoba plum, but the skin is too thin to be a pure Manitoba.

Price of trees, one year buds on native Americana plum roots, each \$1.00.

Pembina Plum

Offered for the first time spring 1917. Pedigree: Manitoba wild plum X Red June plum pollen. The Red June is one of the earliest and best plums, imported many years ago from Japan. Entire available stock for spring only 15 trees, one year buds on native Americana plum roots, at \$1.00 each.

Cree Plum

Offered for the first time spring 1917. Pedigree: Manitoba wild plum X Combination plum pollen. When introduced in 1901 by Luther Burbank the Combination was considered the best in quality of 25,000 seedlings. Trees of Cree plum, one year buds on native plum stock, only 5 trees available, at \$2.00 each.

Native Plum Pits and Seedlings

We are often asked for pits of native plum seedlings from which to grow stocks to use for budding and grafting. We can spare some native plum pits (cleaned now and stratified for freezing in sand), at the rate of 1 pint for \$1.00. Native plum seedlings, one year old, \$5.00 per 100.

Tom Thumb Cherry

The following is from our 1916 spring list:

"The first step in my project of breeding plums true to seed to avoid the necessity of building and grafting. T. T. Seed No. 1 is a seedling of Opata. T. T. Seed No. 2 is a seedling of Ezaptan which is of the same pedigree as Sapa. I am not sure this plan will be desirable as the trees would need to be isolated when in bloom, either by tenting the trees or by planting them far from other trees. Some of them will no doubt revert, others will come true. To complete this work, seedlings should be raised and only those saved that come true."

The following is from our 1921 spring list:

"We have not sent out trees of this series since, but have a few trees for spring of True to Seed No. 2. I have watched this seedling closely the past five years. It is practically a Sapa in fruit, but the plant is a low bush, having much the same habit as its granddam, the native Sand Cherry. Bears freely on one year shoots in nursery, from the ground up, and annually thereafter. But probably the plant should be propagated by layers to save the expense of budding. What has been done in this seedling is really to reduce the choice black-purple flesh plum-sand cherry hybrid to the stature of a small fruit. They can be planted close together like currant bushes. What more can be done, the future must disclose."

I have now named T. T. Seed No. 2 the Tom Thumb Cherry. Plants, one year old buds on native plum roots, each 50 cents.

Sand Cherry Seedlings

Western Sand Cherry, *Prunus Besseyi*. A native of the highest and driest lands west of the Missouri river in this state. A dwarf bush fruit much favored by the Sioux Indians. These plants are seedlings of our third and later generations under cultivation at the South Dakota Experiment Station, hence many of the bushes bear fruit of extra size and fruit of all the seedlings is good enough for sauce.

Price, 10 one year seedlings for \$1.00.

Champa Sand Cherry

A Bushy Tree, Both Useful and Ornamental.

Introduced spring 1912. A seedlings of the Sioux, one of our pure Sand Cherry seedlings. The Champa exceeds the Sioux somewhat in size and appears to be the largest Sand Cherry to date. Color, glossy black; pit, small, long, rather than round. This has proven productive in many places. It makes a low bushy tree. I consider this of value for ornamental planting, owing to the great abundance of flowers in spring. The flowers are white with pink tinge.

Price, one year buds on native plum stock, 50 cents each; \$5.00 per dozen.

Breeding of Hardy Red Raspberries

The raspberries from eastern and southern states are not hardy for the northwestern prairies. Many years ago I began the work of growing thousands of seedlings of the red raspberry of South Dakota, North Dakota, Minnesota, Manitoba and Saskatchewan. The work is still going on, although greatly hampered in recent years for lack of land. With ten acres now available for next spring we hope to do more in this line in the future. By hybridizing with the standard cultivated varieties of raspberry a number of promising seedlings have appeared. The Sunbeam was the best in the first seven thousand seedlings, and the Ohta the best in the next six thousand. Both have become prominent over a large area. The object of this work is to develop red raspberries that will be hardy without winter protection. The following six varieties are offered with the same idea in mind. Therefore, they are not intended to compete with the larger fruited varieties that need to be protected by laying down the canes and covering with earth over winter. It may be that our future ideal hardy red raspberry will be derived exclusively from the pure native wild raspberry of the Northwest, but my experience with many thousands of seedlings indicates that this will be a slow process. Meanwhile, these varieties will be useful.

Price of these new raspberry plants, 3 for \$1.00, 12 for \$3.00. But we have more plants of Spineless, Fewthorn, and Starlight than of Smooth Cane, Moonbeam and Twilight, so that on assorted late orders it will be necessary to vary the assortment accordingly.

Spineless Raspberry

Offered for the first time. A hybrid of the wild red raspberry from Cavalier, North Dakota, with pollen of Loudon red raspberry. Remarkable for its thornless canes. Fruit is about three-fourths of an inch in diameter, of extra good flavor. The canes have a blue bloom with some red toward the tips. In our experiments in breeding raspberries free from cane rust (anthracnose), this is one the most immune although not quite free.

Fewthorn Raspberry

Offered for the first time. A hybrid of the Minnetonka Ironclad red raspberry with pollen of a wild red raspberry from the Black Hills near Rapid City, South Dakota. Canes almost thornless, except for a few weak bristles near the ground. Fruit of good size $\frac{5}{8}$ to $\frac{3}{4}$ inch in diameter. Color is dark red. The main point about this variety is that the berries keep well. They are firm and shrivel rather than rot.

Starlight Raspberry

Offered for the first time. Of the same pedigree as Ohta, a hybrid of the wild red raspberry from Cavalier, North Dakota, with pollen of Minnetonka Ironclad. Canes with some thorns, but very little anthracnose. One of our very largest fruited seedlings in 1920, averaging somewhat larger than Ohta, and equally bright in color.

Smooth Cane Raspberry

Offered for the first time. A hybrid of the wild red raspberry from the Black Hills at Rapid City, South Dakota, with pollen of the Minnetonka Ironclad red raspberry. Fruit round, three-fourths of an inch in diameter, quite firm. Plant strong and stocky; second in its resistance to cane rust (anthracnose). The cane is thornless, the leaf stalks are slightly bristly.

Moonbeam Raspberry

Offered for the first time. A hybrid of the wild red raspberry from Cavalier, North Dakota, with pollen of one of our hybrids of the wild red raspberry from the Black Hills at Rapid City, South Dakota, with pollen of Shaffer, a purple cane raspberry from New York. This plant has a few thorns, although not as many as some of the other seedlings. Berries large, late and firm. Plant dwarf in habit but stocky.

Twilight Raspberry

Offered for the first time. Grown from select mixed fruit from our large seedling plantation of the wild red raspberry of South Dakota, North Dakota, Northern Minnesota, Manitoba and Saskatchewan, and their hybrids with standard cultivated varieties. Nearly all these seedlings were discarded but this one was saved, owing to the strong cane. Canes strong and stocky with some thorns but very little anthracnose. The fruit averages larger than the King as fruited here; color, a good light red; quality good.

Sunbeam and Ohta Raspberries

The Sunbeam was introduced in the spring 1906 as the best of seven thousand seedlings. It is a hybrid of a wild red raspberry from Cavalier county, North Dakota, near the Manitoba line, crossed with pollen of the Shaffer, a large purple-cane raspberry from New York.

The Ohta was introduced in spring 1912, as the best of the next six thousand seedlings. The Ohta is a Sioux Indian name for much or many. Female parent, a wild red raspberry from Cavalier county in northeastern North Dakota; male parent, the Minnesota Ironclad, a red raspberry. Ohta is fifty per cent larger in fruit than Sunbeam and has found much favor even far south into Missouri, owing to its large size and bright color.

In starting trial plantations of new varieties, it is desirable to plant the older sorts at the same time. A few plants of Sunbeam and Ohta raspberries can be spared for this purpose at the same price.

Hansen Siberian Muskmelon No. 3, seeds per packet, 25 cents; Hansen Siberian Watermelon No. 3, packet of 10 seeds, 25 cents. Caragana hedge seedlings, write for prices.

Siberian Black Currant

Offered for the first time. Collected by N. E. Hansen in the Tomsk province of Siberia.

Fruit of good size and plant perfectly hardy. The ordinary black currant is a native of western Europe where the fruit is highly prized for jelly and jams. But it does not do well in the prairie Northwest. I believe this Siberian black currant will be hardy far north into northern Manitoba and Saskatchewan, Canada.

Price, strong one year seedling plants, 2 for \$1.00.

Wild Gooseberries

Offered for the first time. The native gooseberry of this region (*Ribes gracile*) has been carried through seven plant generations. The eighth generation is now coming on. Many thousands of seedlings have been discarded. Some interesting hybrids with the immense gooseberries of western Europe have been obtained, but these are not yet ready for distribution. Meanwhile, we can spare this year some of the pure native seedlings; bushes vigorous, very productive; thorny; fruit large, up to or even exceeding an half-inch in diameter, black, smooth, makes an excellent red sauce.

Price of gooseberry seedlings, 5 for \$2.00.

Tetonkaha Rose

Offered for first time in the spring of 1912. A seedling of the wild prairie rose from Lake Tetonkaha, about eighteen miles northwest of this station, crossed with the pollen of a hybrid of *Rosa rugosa*, so that it is a combination of at least three species. In the 100 seedlings obtained from the cross, 74 were double and 26 single; all deep pink and fragrant. The stock offered consists of root sprouts from these 26 original double flowered seedlings. The flowers are fully three inches in diameter; the bush is perfectly hardy, flowering abundantly in June; about 18 to 25 petals, deep rich pink; very fragrant; appears desirable for dwarf hedges or as an ornamental shrub. The habit is more upright and the flowers are less concealed by the foliage than in the pure *Rosa rugosa*. This Tetonkaha rose proves absolutely hardy and very desirable in many places. It is a very free bloomer. Plants of strong growth and as they sprout freely it should not be necessary to propagate on tender commercial stocks or from cuttings.

Strong transplanted plants, one to three feet, each 75 cents.

Roses for Mass Planting in Parks

In the work of crossing the wild roses of Siberia and the prairie Northwest with the choicest cultivated varieties thousands of seedlings have been grown from which I have selected the best with double or semi-double flowers for further work. The remainder are strong bushes, nearly all from three to six feet in height, with fragrant single red or pink flowers. They will be valuable for mass planting in parks.

Price \$4.00 per dozen. For larger lots write for prices. They will be dug only as ordered.

Rosa Rugosa, Siberian Form

The well known beautiful hardy rose with dark crimson single flowers up to four inches in diameter. Attractive ornamental in autumn and early winter with large bright red fruits, which are used, with seeds removed, for food in its native home. Our own importation, descended from the original introduction from Siberia by the Imperial Botanical Gardens, at Petrograd, Russia. The Siberian form of this species is superior to the Japanese form.

Plants, strong one year seedlings, each 50 cents. Large plants, several years old, each \$1.00.

Siberian Almond

A beautiful lawn shrub destined to great popularity.

Amygdalus nana L. All visitors to the college grounds in early spring are attracted by the remarkable color display of this beautiful shrub, which should be planted in every garden in the Northwest and far north into Canada. A dwarf ornamental with abundant, bright rose pink flowers, the very first of all shrubs to bloom in the spring. Splendid to plant in front of other shrubs on the lawn. Grown from our importations from the dry steppes of the Semipalatinsk region of Siberia, where the temperature ranges from 50 degrees below zero in winter to 106 degrees above in summer, and only eight inches of total annual rainfall, including snow.

Small one year plants, each 50 cents.

May Day Tree

This bird cherry from Eastern Siberia is worthy of a place on every lawn in the prairie Northwest. It is remarkable for being the first tree to come into full leaf here on the College grounds. The large green leaves and wealth of white blossoms early in the spring make the tree decidedly ornamental. In fruit the tree is no special improvement over our own native choke cherry, but is decidedly superior in habit because it does not send up sprouts or suckers. These seedlings are descended from the stock originally imported from Russia by Professor J. L. Budd.

Price, one year seedlings, 4 for \$1.00; 100 for \$10.00.

Siberian Buckthorn

Brought by N. E. Hansen in 1913 from the dry steppe Semipalatinsk region of Siberia. The plant is hardier than the common Buckthorn; the foliage is of a brighter green and appears earlier. The Siberian Buckthorn will I believe supersede the common Buckthorn as soon as it can be propagated in quantity. The glowing green foliage and neat habit makes this a very attractive ornamental shrub for the lawn, either for hedges or as single specimens. Flowers small, white; berries black. Botanical name undetermined.

A few one year plants can be spared at 50 cents each.

Semipalatinsk Bush Honeysuckle

Offered for the first time spring 1921. In 1913 on the dry steppes at Semipalatinsk, Siberia, I found a choice Bush Honeysuckle of tall growth with yellow or red berries. This will be hardy far north. Good for hedges, screens, or as single specimens.

Price, one year plants, 2 for 50 cents; large bushy plants, 3 to 5 feet, each \$1.00.

Hopa Red-Flower Crab

Offered for the first time spring 1920. Hopa is the Sioux Indian word for "beautiful." A promising addition to our list of ornamental trees for the lawn owing to its wealth of beautiful deep rose crimson blossoms. A striking sight when in bloom. The fruit is too small to be of value for eating, being less than one inch in diameter, but its bright red color will light up the tree in autumn, and the small size is an advantage as the tree is less apt to be stripped for fruit when standing on the lawn. Female parent *Pyrus Malus Niedzwetzkyana*, a small red-fleshed apple from Turkestan in the high mountains between Turkestan and China, male parent *Pyrus Baccata*. This was not a hand cross, but I am satisfied that the *Baccata* was the pollen parent. Trees of strong growth in nursery.

Price of trees: One year buds on mixed *Pyrus baccata* crab stock, each \$1.00.

Siberian Basket Willow

First offered spring 1921. In the fall of 1913 in the dry steppe region of Semipalatinsk, Siberia, I walked along a small creek which had almost dried up. Stumbling I seized hold of a willow and found that the branches simply would not break. So I brought home a few cuttings. You may tie bow knots in these pliable shoots, but it appears practically impossible to break them. They ought to be good as a tie willow for nursery work or for basketry. Cuttings, 10 for 50 cents.

Russian Silver-Leaved Willow

First offered spring 1921. Some years ago I brought from Russia a silver-leaved willow under the name *Salix regalis*. The botanical status of this tree according to Bailey, appears to be *Salix alba*, var. *splendens* or *Salix alba*, var. *argentea*, hence a form of the white willow.

These trees have made a strong growth, are perfectly hardy, and are noteworthy for the silvery foliage. A rich silver satin on both sides. A few cuttings can be spared at 10 for \$1.00.

Manitoba Hazelnut

Ornamental as well as useful. The need is apparent of a nut bearing shrub for the open prairie. We now have the wild native hazel nut of Manitoba in the third generation under cultivation. Visitors to the college grounds have been pleased with the heavy bearing of these hazel hedges. The plants vary greatly in size of fruit and in time will no doubt approximate that of the filberts of England and France.

Price of one year old plants, 4 for \$1.00; 12 for \$2.50.

Nevis, Minnesota, Hazelnut

Grown from wild hazelnuts picked near Nevis, northwestern Minnesota. These wild hazelnuts are interesting wild ornamental plants and the fruit is worthy of consideration although not as large as the tame filbert.

Price of plants, one year old seedlings, 5 for \$1.00.

Hansen Siberian White Sweet Clover

Melilotus alba raised from seed found growing wild on the dry steppes of Semipalatinsk, Siberia, in 1913, by Prof. N. E. Hansen. *Melilotus alba* is the common white sweet clover which is native in Europe, North Africa and middle Asia. In Europe it is found as far north as latitude 15 degrees, 16 seconds in Norway. As found under cultivation, the exact origin of common Sweet Clover is not known. It will be of interest to ascertain the comparative value of this strain of the plant from this 8-inch rainfall climate. At the University of Saskatchewan, Saskatoon, Saskatchewan, Canada, this Siberian Sweet Clover has been found to be of great promise as the hardiest, earliest and best of all the strains of White Sweet Clover. It may have a great bearing on the problem of adding humus to summer fallowed land. The name Arctic Sweet Clover has been suggested for this strain, but the name Hansen Siberian White Sweet Clover should be retained as it has priority and the plant is not really arctic in its range.

Price of Hansen White Sweet Clover seed, per packet, 50 cents; price of one year old plants, per 100, \$1.00.

Chee Grass

For White Alkali Soils

Chee Grass is a giant grass growing up to 16 feet or more on pure alkali soils on the dry steppes at Semipalatinsk. I brought this from my fourth expedition to Siberia on the dry, open steppes near Semipalatinsk, Southern Siberia. This is a region with a total annual precipitation of eight inches, including both rain and snow, and with a temperature range of from 106 degrees in summer to 50 degrees below Fahrenheit in winter, often without snow. We have not had good luck with the seeds as they are too small, but the plant propagates freely by division of the old plant. On heavy black soil here at Brookings the plants have not attained as large size as on the white alkali soils of Semipalatinsk. In its native home the Kirghiz use the old stems for matting in the tents, but early in the spring the grass is eaten freely by all live stock. We can spare a few plants, from division of the roots. Some plants I sent to the Experiment Station at the University of Saskatoon, Saskatchewan, made a vigorous growth.

Small plants, divisions from the original stock, 10 for \$1.00.

Semipalatinsk Alfalfa

Described in Bulletins 141 and 167. From the dry steppes of Semipalatinsk, Siberia. Some of the farmers who have had excellent results with this alfalfa on the driest uplands of the west now abbreviate this word to Semi. A variety of great vigor and especially adapted to transplanting into cultivated rows. It is not at its best the first season as it first makes its remarkable root system. It does its own subsoiling on hardpan. Flowers yellow. I find this to be the strongest in growth of all the varieties of *Medicago falcata*.

This variety shells its seed through a long season, which is Nature's way of securing a stand in its native country with only eight inches total annual rainfall. To improve the seeding habit from the standpoint of raising seed, let the plants stand uncut and select seed from the plants that hold their seed the longest. Some will hold the seed until frost.

Price per small packet, 50 cents. Strong plants for transplanting, grown from seed brought direct from Semipalatinsk by N. E. Hansen, 20 for \$1.00.



Cossack Alfalfa, one plant, dried weight eight pounds. Grown on upland without irrigation at Wall, western South Dakota, and exhibited at the South Dakota State Fair at Huron, 1915. Plant held by Prof. N. E. Hansen.

Cossack Alfalfa Seed and Plants

Cossack Alfalfa. Introduced from Russia and named by N. E. Hansen. This has the world's record of increasing from a spoonful of seed in 1906 to a thousand bushels of seed in 1916. Now much more. For spring I have only a few pounds of Cossack seed, grown in 1921 on our old plot here on the Station grounds, available for special experiments. Price of Cossack alfalfa seed per small packet, 50 cents.

In the hands of many farmers the setting out of Cossack alfalfa plants and cultivating them in the garden makes a positive and quick way of raising a lot of pure seed from the original stock.

Price of Cossack alfalfa plants, per 100, \$1.00.

Hansen White Siberian Proso

A large grain millet from Semipalatinsk, Siberia. Good for table food and for all kinds of live stock. Their surest crop in an 8-inch annual rainfall climate in Siberia. For table recipes, see Bulletin 158 of this Station. Two pounds specially selected for large seed, 50 cents.

GLADIOLUS BULBS

The best summer bulb for the garden. At the 1921 State Fair at Huron, this Department exhibited over 2,000 spikes in 150 choice named varieties. These are not for sale, but 12 assorted bulbs will be given as a free premium with one annual membership in the South Dakota State Horticultural Society.

Special Offer---Double Value for Your Money

The Legislature has made this Society the Department of Horticulture for South Dakota and has fixed the price of annual membership at \$1.00. The reports are published by the state, but aside from the State Official List, the report is sent only to members. This provides a fund to help pay the running expenses of the Society.

The Society wishes to increase its membership.

As a free premium, select One Dollar's worth of seeds, plants or trees from the foregoing list. The order must be received before April 1, 1922. As the supply of some of these premiums is very limited mark your second choice. One of the annual reports will be sent you at once. One book and one free premium amounting to One Dollar, will be sent postpaid for each \$1.00 received. Here is a good chance to get a valuable library of books on South Dakota trees, fruit and gardening, as well as some choice new fruits for the garden.

After April 1, 1922, the only premium available will be one of the old annual reports. This will be sent without further notice. There will be no duplication, because our card index record shows just what reports have been sent to every one who has ever been a member of the Society.

SPECIAL OFFER UNTIL APRIL 1, 1922

The life membership is fixed by the Legislature at Ten Dollars. It is highly desirable that the Society has more life members as they are our permanent source of strength and influence. Residents of South Dakota who become life members may select Ten Dollars' worth of trees, plants, seeds or other premiums from this circular as a free premium. This includes a set of 18 annual reports now issued, as far as available, and one annual report as issued. All premiums sent by express at customer's expense. Address, N. E. HANSEN, Secretary, Brookings, South Dakota.

BOOK PREMIUMS

In place of seed and plant premiums, the following are offered. Select ONE of the following list for each annual membership:

- No. 1—One back volume of the Annual Report of this Society.
- No. 2—Vegetable Gardening, 246 pages, paper cover, by the late Prof. S. B. Green, University of Minnesota.
- No. 3—Popular Fruit Growing, 323 pages, paper cover, by the late Prof. S. B. Green, University of Minnesota.
- No. 4—Evergreens, "How I Grow Them," 95 pages, paper cover, by C. S. Harrison, and "Windbreaks and Shelter Belts," 69 pages, paper cover, by the late Prof. S. B. Green.

TERMS

Terms—Cash with order. Positively no credit given, except to Government Experiment Stations. Stock is shipped by express carefully packed in moss. No orders booked until paid for. No plants sold in less than the quantities specified. Address, N. E. HANSEN, Experiment Station, Brookings, South Dakota.